influence of changes of grade is rarely considered by locomotive engineers. The change from a level road to an ascending grade of 100 feet per mile would cause the water in the boiler to flow back to the fire-box end so as to raise the water-level about $1\frac{3}{4}$ inches, depressing the water-level forward by the same amount or a total variation of $3\frac{1}{2}$ inches.

If the level of the water be found at the top gauge whilst the engine is running with unvarying velocity up a grade of 100 feet per mile, and the engine be stopped upon a descending grade of 100 feet per mile, the actual level of the water over the crown-sheet of the fire-box would be $11\frac{1}{2}$ inches below the top gauge-cock.

If the first observations had indicated one gauge of water only, the actual level of the water, after the engine had been stopped on the descending grade, would be far below the level of the crown-sheet.

From observations made upon an engine by means of a glass gauge on the water column, I have found that the water-level is greatly disturbed during the running of the engine by every change of speed. Whilst at rest the water surface is level; upon starting the engine the water does not take up the motion immediately, but is crowded to the back part of the boiler, and remains so in a greater or less degree until the motion is checked, when the water at first becomes level and then crowds towards the front end of the boiler until the engine is stopped, when its surface becomes level. Running at a speed of about 25 miles an hour, first forward and then backward, the variation at the water-level was about four inches.

D.

A record has been made of the effect of injecting fresh water into boilers containing hot concentrated solutions of various salts; but as analysis of the water supplied to this engine show that they contain but a moderate percentage of salts in solution, it is unnecessary to give the results of the experiments, as the effect produced in practice would add but little to the destructive forces already fully explained, and which are of themselves more than sufficient to account for explosions under the conditions stated.

AN OBITUARY NOTICE OF CHIEF JUSTICE JOHN MEREDITH READ.

By Eli K. Price.

(*Read before the American Philosophical Society, December* 18, 1874.)

It is within the scope of our comprehensive charter to commemorate the life and character of our deceased members. To do so is to promote knowledge, and to render service to science and society. It is thus the dead shall yet speak, and through our press speak to the most intelligent of the civilized world, and to such in future times.

He whose memory we would perpetuate to-night was a most diligent student and able administrator of the science of jurisprudence; that

science without whose protection no other science could be cultivated; nor civilization, or happiness, be maintained among mankind.

John Meredith Read, LL. D., a member of this Society, died on the 29th of November, 1874. He was son of John Read, a former Senator of this State, a member of the Bar, and a long time President of the Bank of Philadelphia; and a grandson of George Read, a signer of the Declaration of Independence and the Constitution of the United States; and Chief Justice of the State of Delaware. Our fellow member was born in this city July 21, 1797, graduated at the University of Pennsylvania, A. B., in 1812; was called to the Bar in 1818. He was elected to the House of Representatives of this State in 1822 and in 1823. He was afterwards City Solicitor and member of Select Council, and in the latter capacity drew up a full and connected account of the finances of the city. Yet later he was successively District Attorney of the United States, and Attorney-General of the State of Pennsylvania. An enumeration of numerous pamphlets containing his reports and arguments may be found in the second volume of Allibone's Dictionary of Authors, under his name.

Long before his elevation to the Bench Mr. Read stood among the leaders of the Bar of Philadelphia, at a period when it was greatly distinguished; when his cotemporaries were the Sergeants, Binney, Chauncey, the Rawles, the Ingersolls, Williams, Meredith, and other eminent counsellors and advocates. His arguments can be here described but by their general characteristics. These evinced the most careful and thorough preparations, both as to facts and law, with an ample brief written by his own hand. From this he spoke with great earnestness and power, with a strong voice. His own strong conviction preceded and was potent for the convincement of court and jury. You never perceived that he spoke because he was employed to speak, but because he felt it his duty to speak; and he no doubt did generally speak according to his actual conviction.

In the celebrated trial of Hanway, in 1851, for treason, Mr. Read was engaged with Thadeus Stevens and J. J. Lewis for the defendant. His preparations for that trial were thorough, and the defence was masterly and successful. In preparation he studied the slave laws of the South, and the law of treason as held in England and the United States. Mr. Stevens afterwards said of that argument. "This speech was never fully reported; if it had been it would have settled the law of treason in the United States for a century." The alleged treason consisted in defending fugitive slaves from capture. Hanway violated the law, but did not levy war against the United States; therefore, did not commit treason.

Though Mr. Read belonged to the Democratic party, he always had a repugnance to slavery; and when the Missouri Compromise was annulled, and that party sought to extend slavery over the territories, it was of necessity that he should soon leave it for the "Free Soil" movement. In a Democratic Convention held in Pittsburgh, in 1849, he offered a resolu-

tion against the extension of slavery, which concluded in these words: "Esteeming it a violation of State Rights to carry it beyond State limits, we deny the power of any citizen to extend the area of bondage beyond its present dominion; nor do we consider it a part of the Constitution that slavery should forever travel with the advancing column of our territorial progress." From that time he became the zealous opponent of the slave power; and when the time came to form the Republican party he was prepared for the work, and from the first, and always, was a supporter of its principles and policy.

Even on the Bench political and Constitutional questions will arise which judges must decide, and will decide according to their political convictions; and this happened several times during the war of the rebellion, when it was in the power of the Courts seriously, if not disastrously, to hamper the action of the National Executive and Congress, for the suppression of the rebellion. In those cases Judge Read was one of the majority of three who uniformly sustained the acts of Congress and the measures of the Government to suppress the rebellion.

When the subject of consolidating the many corporate districts round the old Philadelphia of two square miles into one enlarged city, during the middle years of this century, was agitated, Mr. Read was an earnest advocate for that measure. Though he took no part in framing the new charter, he had prepared statistics of population and finances, which, with the influence of his name, were important to help carry the measure with the people, and the bill in the Legislature.

Mr. Read was elected a Justice of the Supreme Court of Pennsylvania in October, 1858, and commissioned for fifteen years from the first Monday of December of that year. He entered upon the discharge of his judicial duties with an earnest zeal, and performed his full share of the onerous duties of the Court, with exceptions when prostrated by ill health. His opinions are peculiarly characterized by a full history of matters having a bearing upon the cause, and the full citation of judicial authorities applicable to the case. The act of 1810, prohibiting the reading of British precedents, had been repealed in 1836; so that all the investigations and learning of the British Courts were at the service of counsel and the Court. Judge Read, who always desired the fullest light upon the subject of decision, made, while at the Bar, and expected as a Judge, a full citation of the relevant authorities by the counsel, and he carefully availed himself of all that could assist the judgment of the Court. His opinions, therefore, were full of learning, and he brought into our courts, from England and the other States, views and principles that without him would not have enriched our law. His library was extensive, and he kept it furnished with the latest publications; that is, with the most recent editions of elementary law, and the English Reports, and those of other States, as fast as they came from the press.

The opinions of Judge Read ran through forty-one volumes of the Reports; that is, from the 32d to the 73d volume, both inclusive, of our

State Reports. In the first of them we find the evidence of his ardent love of justice, in the severe reprobation of any one being removed from office without notice of the charges made against him, and an opportunity of being heard in his defence. (32 St. R. 478.) In the second of them he delivers the opinion of the Court on the will of Stephen Girard, which decides the city of two square miles to be that preferred in the admission of boys to the College, and that a fatherless child is an orphan within the intent of the will, though the mother be living. It gives the early history of Philadelphia; refers to the customs of London; with a brief biography of Girard, and then he interprets his will, with the aid of lexicons, and Biblical and legal authorities.

Judge Read was always strict in his requirements that trustees should faithfully execute their trusts, both as respects the selection of the proper objects of investment, and as to proper care in making them. (34 St. R. 100.) While he favored the creation of trusts for proper purposes, he was stern in the protection of trust property from insecurity and loss. (46 St R. 494; 41 St. R. 505; 51 St. R. 292.)

As to the power of the United States to levy troops, he held that "Every citizen is bound to serve and defend the State as far as he is capable. No person is naturally exempted from taking up arms in defence of the State; the obligation of every member of society being the same. Those alone are exempted who are incapable of handling arms, or supporting the fatigues of war. This is the reason why old men, children, and women are exempted." (45 St. R. 285.)

His opinion was potential with members of Congress to induce the passage of the act of Congress of March 3d, 1863, authorizing the President, during the rebellion, to suspend the writ of habeas corpus. A letter from Senator Sumner declared his argument conclusive, and it was effective in passing the act.

The labors of the Judge were mostly in the well trodden highways of the law, and his merit consists mainly in knowing well, and keeping to that beaten track. The charm of novelty and new discovery are seldom to reward the industry of the Judge. The merit of adherence to precedents will be easily understood by the layman who has invested the earnings of his life on the opinion of counsel, which opinion must be based on judicial decisions, if succeeding judges can declare the law to be otherwise than it had been held; for such decision pronounces the law for the past as well as for the future, and the citizen may thus lose the law that protected his title by the decision of a cause in which he was not heard. Judge Read was a faithful adherent to established precedent, and hence was an eminently safe and conservative judge.

This is not the place to enumerate the many contributions made by him from the great treasury of British and American law, to the body of the law of Pennsylvania. A notice of a few of these must suffice for an estimate of the value of the judicial services of Judge Read. The profession and the public are indebted to him for the first step made for the

security of title, under our modern acts of limitation, in holding when sitting alone, that a purchaser will be compelled in equity to take a title dependent upon the statutes of limitation for its validity. (6 Pha. R. 185.) One of these statutes removed all exceptions on account of the disability of the claimant, after thirty years' adverse possession. That decision was followed by corresponding decisions by the Supreme Court. (17 St. R. 396; 65 St. R. 55.)

When Pittsburgh City and Allegheny County made default in the payment of their bonds, Judge Read united heartily with his brethren of the Supreme Court to compel those municipalities to meet their obligations, requiring them to lay taxes for that purpose. In his opinion on one of those cases, he says, "Whatever may be said as to the individuality of acts of officers and agents *outside* of their authority is wide of the mark, when attempted to be applied to defective execution within the sphere of authority. The one may be void, but every principle of justice, as every presumption, forbids such conclusion in the other case." Those dealing with officials are not to suffer by their irregularity. "Public business could never be done under such a system. There must be faith in public servants within the scope of their authority, or public business must stop. For defective execution, the public, whose servants they are, must suffer, not innocent parties." (37 St. R. 287–8.)

Judge Read is entitled to especial praise for the part he took in saving special trusts to the jurisprudence of Pennsylvania. Since 1829 a series of decisions made by the Supreme Court had established the law giving validity to special trusts to protect the improvident, helpless, or incapable, by the interposition of trustees. In 1856 there was commenced a counter course of decisions that threatened to deprive parents and benefactors of the power of safely making provision for the unfortunate and helpless. This is a power that all considerate persons would be likely to consider an indispensable one for the welfare of civilized society; yet its existence in our law was threatened. In 1864 the Supreme Court had the opportunity of arresting the downward course of decision, in the case of Barnett's Appeal (46 St. R. 392.), and to Judge Read was assigned the duty of writing the opinion of the Court. He says: "The principal error is in laying down as the law of Pennsylvania, that a trust to receive rents and pay them to another is executed, although not an use executed by the Statute of Uses, but arising from some general principle inherent in the common law of the State. This is not supported by authority." The Judge then proceeds to review the course of decisions prior to the innovations, and restores them into authority; and, with slight modification or exception, these remain in authority down to the latest decision of the Supreme Court. The opinion concludes: "The question then is, shall the settled law of Pennsylvania, as to trusts, remain as it was understood by all our tribunals and the Bar, and had been received since the foundation of the Province to within the last eight years, or are we, without the sanction of the Legislature, entirely to uproot it, and substi-

tute a new system which has been the subject of serious criticism and constant complaint? We do not approve of such judicial legislation, and are therefore of opinion that the Auditor and the Court below erred in declaring that there was no estate vested in the trustees of the testator's will, and, so far, the decree must be reversed." That is, the Court decided that the trustee should hold the title and manage the estate, for the benefit of the beneficiaries; and must hold and protect it upon the trusts specified by the testator.

Another occasion of Judge Read's delivering the opinion of the Supreme Court had a direct interest for this Society; and is also interesting to the science of jurisprudence, though the occasion for its citation as authority may not be frequent. When the square upon which this hall stands belonged to the Commonwealth, the Legislature granted to this Society the perpetual use of this lot for the purposes of this Society, esteeming our objects to be of such public benefit as to comport with those for which the square was held by the State. Though this is a perpetual right in the Society, it was not such a title as could be aliened by the Society to others to be held on other uses, without the authority of the State. This title is, therefore, unique; is unlike any other title in the State. It is a great principle of the common law that titles shall be freely alienable, so that they shall best subserve the interests of civilized society. This is the reason of the rule of law against perpetuities, established by judges who were wisest of British statesmen. The exception allowed by this rule is limited by the duration of designated lives in being and a minority or twenty-one years thereafter. During that period titles may be limited into a succession of limited interests, or clothed with trusts for the maintenance of those deemed incompetent to manage their property for themselves. A special exception was created by the British Parliament, when the nation granted Blenheim and its princely domains to the Duke of Marlborough, to guard the country's gift from alienation by his heirs; and to that immunity it is owing that that splendid castle and domain have not been sold to pay the debts of the heirs of the great Duke. A partial exception exists in Pennsylvania, by an act of the Legislature of 1871 (P. Laws, 879), under which the descendants of the Indian Chief, Cornplanter, now hold their lands in severalty, but inalienably to any but Indians, so that white men may not defraud them, or intermix in the colony. Such a feature should be incorporated into the titles of our Western Indians, when they also shall have lands allotted to them in severalty; a step of progress that must soon be reached if they are to be preserved in existence.

The purpose of the restricted grant to this Society was to preserve the property forever for public uses; for in public and charitable uses lands may be held unalienable in perpeturity. The opinion gives a history of this society, and the following extract will show the grounds of the decision of the Supreme Court, with the friendly estimate of Judge Read, when our library was levied upon for taxes assessed upon the lot and hall:

"It is clear, then, that the Society could not charge this lot by any recognizance, mortgage, judgment, debt, obligation, or responsibility, nor could they create any lien upon it; because it could not be sold by any form of execution, and this being the case, no taxes could be a lien upon it, and no form of proceeding to recover the same could create a lien upon this lot, because it could not be sold under any such judgment. It seems stronger in the case of taxes levied under the authority of the very Government that has expressly prohibited any sale of it, except in the cases specially pointed out, and by the character of its public uses as expressly declared. The uses for which it was given are public, and can neither be affected nor destroyed by the adverse action and process of a court of law. The court below were therefore right, and their judgment must be affirmed.

"This Society numbers amongst its members many distinguished foreigners of great scientific eminence, and it corresponds with public bodies and private individuals devoted to the pursuit of science in every country in Europe; one of its latest correspondents being a Hungarian Society, whose Transactions are published in their native language. It has a most valuable library of about 27,000 volumes, of which a complete catalogue is now preparing at a very heavy expense, including a great many manuscript letters and papers of a most valuable and rare character, relating to the early history of this Province and country. A large number of the works in the library are of a scarce and rare kind, and are not to be found on this side of the Atlantic, including a complete set of the Transactions of the Royal Society of London, commencing two centuries ago. The first President of this Society was the originator of the first fire company, the first public library, the first hospital, and the first academy, now the University of Pennsylvania, a signer of the Declaration of Independence, Minister to France, one of our Ministers Plenipotentiary who signed the provisional articles and the definitive treaty of peace between the United States and Great Britain, and finally one of the framers of the Constitution of the United States.

"This was Dr. Benjamin Franklin, the patriot and the Philosopher; and I cannot but express a confident hope that the City and the State of which he was so distinguished an ornament, will never permit the hands of the tax-gatherer to diminish the fund devoted to the interests of science in every part of the world, both in peace and in war, and belonging to a Society of which he was the founder."

Judge Read, in an opinion concurring with his brethren on the bench, held the Southern Confederacy to be "an entire and complete nullity: The country and the people embraced by this unholy rebellion are simply in a state of rebellion, and are rebellious citizens, but at the same time they are enemies, and may be treated as such. They may be tried as traitors and pirates, and may, under the laws of the United States, be convicted and punished as such, and no man or nation could complain of it as an unjust or illegal act." Yet it was held that we could and should

recognize so gigantic a rebellion as belligerents, from motives of humanity, that the war might be conducted upon the principles of civilized warfare, to prevent indiscriminate slaughter, and that there might be an exchange of prisoners of war. This, he held, might be done without "recognizing the rebel leaders, or their organization, but constantly denying them to be a government *de facto* or *de jure*, or as possessing the powers to issue letters of marque and reprisal, or to fit out privateers, or armed vessels, or to make captures, or to establish prize courts which could condemn as legal prizes the vessels captured by their cruisers." (47 St. R. 180.)

An opinion of the Supreme Court, delivered by Justice Read in 1865, is interesting to science and to every one who travels by railroad. It was a suit by a widow and children against a railroad company for the loss of the life of a husband and father, by alleged negligence, under one of the modern statutes in such case. It is held that at the common law no action was maintainable against a person who caused the death of another; also that *an opinion* of the value of the life lost, by competent judges, is lawful evidence. The loss to be computed is simply that which would be compensatory to the surviving family, in the ability of the deceased to provide for his family. It is therefore held to be a proper inquiry of a witness, from his knowledge of decedent's age, habits, health, and physical condition, how long he would have been useful to his family. From liability for the company's negligence they cannot stipulate for exemption. (51 St. R. 315.) This seems a very mercantile estimate of the value of human life; yet, considering the ready sympathy of juries with the bereaved family, it is the only one that carrying companies can endure and live.

In 1866 several cases involving the validity of the legal tender act, came before our Supreme Court, and its constitutionality was sustained. Judge Read's opinion gives a history of paper money in America. (52 St. R. 71.) In 1819 the Supreme Court of the United States had decided that Congress had the power to create a bank whose bills or notes should be receivable in all payments to the United States. If Congress could do this, the logical inference was that Congress could directly create a currency. In making such issues a legal tender Congress did but what the dependent Colonies had done. The Constitution, while denying the like power to the States, gives expressly to Congress the power to coin money, to regulate the value of domestic and foreign coins in circulation, and, as a necessary implication from positive provisions, to emit bills of credit. Congress was expressly clothed with power to enact all laws necessary and proper for carrying into effect the enumerated powers; and this act was necessary to that end. "This was done at a time and under circumstances which admitted of no other means to carry those great powers into full and effective operation." It was a measure requisite to save the Government and protect the people, in the war of the rebellion; and will be a measure necessary to save and protect them in

all future great wars. Every government must be sufficient unto its own existence ; otherwise it must perish.

The Supreme Court of the United States, in 1870, Justice Strong, who had concurred as one of our Supreme Court in the opinion of 1866, delivering the judgment, also decided the validity of the legal tender act. (12 Wal. 457.) That Court held that Congress, besides those specified, had express power to make laws necessary to carry into effect "all other powers vested by this Constitution in the Government of the United States;" and say, "It was certainly intended to confer upon the Government the power of self-preservation." (p. 533.) The import of all the Constitution is to be regarded in the ascertainment of the powers of the Government ; and it certainly acquired the universal right of self-preservation. It may not then by self-restrictions and abnegation destroy itself, and thereby fail to fulfill the purpose intended by the American people, and extinguish the fairest hopes of mankind for republican liberty.

In 1867 Justice Read delivered the opinion of the Supreme Court of Pennsylvania, protective of our City's Water Supply, in restraining the pollution of a tributary of the Wissahickon, in which several salutary general principles were applied : No one has a right to foul a stream and make it unfit for domestic use to those below : If the upper riparian owner claims right by prescription he can only succeed for the extent of pollution which existed twenty-one years before : The prescription requires the strictest proof, because it is against common right. The opinion is learned and able. (54 St. R. 40.)

In the same year Justice Thompson and Justice Read wrote concurring opinions, and the majority of the Supreme Court refused the strong remedy of injunction to prevent the running of passenger cars on Sunday. In this case Judge Read uses the language, "We have public squares and a great public Park owned by our fellow citizens, and intended for their benefit, and that of their wives and children. Clergymen, lawyers, physicians, merchants, and even judges have six days in the week in which they may enjoy all these and other advantages, and which they may do cheaply by means of the passenger railways. The laboring man, the mechanic, the artizan, has but one day in which he can rest, can dress himself and his family in their comfortable Sunday clothes, attend church, and then take healthful exercise ; but, by this injunction, his carriage—*the poor man's carriage, the passenger car*, is taken away, and is not permitted to run for his accommodation. The laboring man and his children are never allowed to see Fairmount Park, a part of his own property." (54 St. R. 451.)

In January, 1871, the opinion of the Supreme Court was delivered by Justice Read upon the act which authorized the Public Buildings to be erected on Penn Square. Holme's first plan of our City laid out a Centre Square, and one in each of the four angles of the city : the first for buildings of public character, the others to be for the like uses as the Moorfields in London. A history of the location and uses of

Moorfields is given in the opinion, and also that of Penn Square; and the Court had no difficulty in sustaining the validity of the act, as "the Legislature is simply appropriating the square and the streets to the purposes to which the square was originally dedicated." (63 St. R. 489.)

But a few more cases illustrative of the judicial character of Judge Read must suffice. One is a new application of an equitable principle, made necessary by modern legislation, enacted with purpose to favor women's rights. By statute a widow may reject her husband's will, and may elect to take her intestate share in both real and personal estate. Her doing this disturbs the plan of the will, and usually disappoints other legatees. It is just, and so decided by our Supreme Court, that the benefit intended by the will for the wife shall be sequestered to compensate those legatees whom her election has disappointed. (65 St. R. 314.) Again: one under equal obligation to make contribution, as where one co-surety has paid the whole debt, the other is held bound to refund a rateable proportion; but this rule does not hold between joint wrong-doers where one has paid the whole damage, from a policy to discourage such combination to do wrong. But this is confined to cases where the plaintiff is presumed to know that he was doing a wrongful act. Therefore, where a traveller has recovered against one or two counties, bound to maintain a county-line bridge, owing to the bridge breaking down, the county paying the whole damage may recover contribution of the other. (66 St. R., 218.)

A testator must be of sound mind to make a valid will; but if the unsoundness does not affect the general faculties, and does not reach his capacity of testamentary disposition, he may make a valid will. Physicians and unprofessional witnesses may state their opinion of the sanity or insanity of the testator, with the difference that the former are heard as experts. (68 St. R., 342.)

You may perceive from these decisions that a philosophy of practical wisdom pervades the law; and those who know it best are the most ready to assent to the boast of Lord Coke, its greatest ancient authority, when he speaks of "The law, which is the perfection of reason." In it are found the wisdom of all practical life and morals, the rules of conduct, of individuals, society, and governments, and, consequently, it contains the larger and most useful share of the philosophy of the human mind. You have not, therefore, been led into foreign fields, but into those where we should find our more familiar range. The law it is that must preserve the peace and well-being of our race. Its philosophy and progress are worthy the study of the highest intellects. As perfect as Lord Coke thought it, the law has ever since his day been improving towards a higher perfection; and generally the progress has been made in manner to preserve intact the obligation of contracts and the vested rights of property.

When Chief Justice Thompson's term of office expired in December, 1872, Judge Read as senior judge became Chief Justice. This highest judicial office of our State Chief Justice Read held for one year, when his

term expired. For some years his health had been failing, and at times he was unable to take his seat on the Bench, which fact increased the labors of his brethren. At the Bar meeting held for Judge Thompson, after his sudden death while speaking in Court, Judge Read made acknowledgement of the kindness of his brethren. He said: "I have known my deceased friend intimately for fifteen years, for fourteen years of which we were members of the same Court. He was a most kind and considerate associate, and I am personally deeply indebted to him for his thoughtfulness and attention to myself when ill-health called for the indulgence of my brethren. He was a good man, an honest and upright man, an admirable Judge, and a learned lawyer, with great good sense. I was warmly attached to him, and I deplore his loss. I believe every word of the resolutions offered by Judge Porter to be true and eminently just, and a proper tribute to the virtues, talents and great ability of our deceased friend."

Within a day or two after his retirement from office, the late Chief Justice Read called upon the writer of this notice, who had been writing against the new Constitution, and said, "I am again a free citizen, and can speak my mind freely. I also am opposed to this new Constitution, and have an objection to it you have not taken: it is destructive to the secrecy of the ballot." His article appeared December 8th, 1873. The numbering of the voted ticket with the same number set against the name of the voter in the list of voters as required discloses how he voted. The late Chief Justice says, "The freedom of elections depends entirely upon *the ballot* and its *inviolable secrecy*, so that no man shall know how any elector has voted. This secrecy enables all men, in all the walks of society, to deposit their ballots in perfect security that the knowledge of their vote is strictly confined to their own breasts." The officers of election in the State he stated to be 12,795, who know on the night of the has election how every man in the Commonwealth voted. He also takes objection to the great invasion made upon the elector's franchise when there are two candidates, which prevents him from voting *against any* candidate, and makes the voting for the other a useless form. This able article, the last written by him we commemorate, shows his undying love of liberty and justice; his sacred regard for the equal rights of the citizen; his anxiety to protect the humble and poor from dictation and oppression; and his desire to preserve the value of the elective franchise to the citizens.

I would here give the testimony of his associate on the Supreme Bench, Judge Williams, at the Pittsburg Bar meeting, on receiving the news of the death of the late Chief Justice: "He possessed talents and learning of a very high order, and his personal and official influence was very great. He was a gentleman in every sense of the word; a gentleman of the old school, of the very highest sense of honor, of great dignity of character, and in social intercourse kind, affable and courteous." "He had an accurate knowledge of American History, especially of the times

in which he lived, and was familiar with the personal characteristics and history of the men who have been prominent in our State for the last sixty or seventy years, and it was this accurate knowledge which made his conversation so charming and instructive. He was a true friend; strong and unswerving in his attachments; ready to make any sacrifice for his friends, and when in trouble was untiring in his efforts to serve them. He was a man of the strictest integrity, and despised everything that was low and vile. With him the equity and justice of the case *was the law of the case.*" "He was a man of chivalrous courage, persistent purpose and inflexible will. He did not know what fear is." "It is the will power which gives executive ability and persistency of purpose, and enables one to achieve great results. Judge Read had this power to a remarkable degree." Such testimony from such a source is very strong, for judges sitting together for many years, discussing and deciding the many diversified and important cases which come before them, at the same time settling the law of the State, must make them thorough judges of the attainments and qualifications, and of the temper, disposition and self-control of their associates. There is to be added to the above delineation of personal traits, the fact that the characteristic courage and determinate will, were not exercised without the careful research and thought which produced certain belief of rightful action.

The characteristics of Judge Read's judgments were a plain and terse simplicity, without attempt at ornament. It is no exception to this to admit that many of his opinions are long. As a general rule they are short; and when not so, their length is owing to a full history, or statement of facts, and an ample citation of authorities; but all are given in brief language. His practice was to state the facts fully and clearly, and then without process of argument, to apply all the law, British and American, applicable to the facts; and it is at once seen that these warrant the conclusion announced. So conservative was he, that in his hands the law, as well-read lawyers are trained to understand it, was felt to be safe from innovation, while he fearlessly attacked recent innovations, and sought, with large success to restore our jurisprudence to its ancient foundations, except as these had been changed by statute, or the constitutions; methods of progress which could have no retrospective operation to divest vested rights.

Judge Read seemed to have selected no especial branch of the law in which he became more authoritative than in others. His general preparation in all was full; yet he never argued or decided a cause without a special and full study of the case, applying all the proper authorities; hence he was always accurate, and his opinions are mines of erudition for the student, lawyer and judge. In whatever branch of the law the question arose he met and disposed of it with the like able grasp and learning. He was equally familiar with Civil and Criminal law and their practice; with International and Municipal law; with Law and Equity; with the Titles, Limitations and Descents of Real and Personal Estates;

with Wills, Legacies and Intestacies ; with the Constitutions, Charters and Statutes of the United States, the State, and of our Cities. With the Laws, Ordinances and Usages of Philadelphia he was especially familiar. His love for his native city was intense, and he was ever ready to devote his time and talents to her service. His zeal continued to the last ; and he was earnest in his efforts that this should be the place of the Centennial Celebration, and that it should be a great success. His patriotism never grew cold or suffered loss from the chill of age ; but he was always young, progressive and ardent for the progress and improvement of the City. The Park, Public Buildings, and wide well-paved streets, and the water supply were objects of his lively sympathy.

The State and United States, their welfare and prosperity, were also very near to his sympathies, and he was ever alive to all that concerned their well-being and safety. This is shown in all the acts of his life, both as citizen and judge. That he lived and labored in the law as he did, and was the able and patriotic citizen that he was, make the name of Chief Justice Read an honor to his family, his City, his State, and Country, and by them all his memory will be held in respect and honor through future time.

The late Chief Justice Read left to survive him, a widow, and his only heir, John Meredith Read, who ably represented our Country, as Consul General to France, and resided in Paris during her fearful investment by the German armies, in 1870 ; and who now again represents our Nation as Minister to Greece.

Chief Justice Read lived and died in the Christian faith ; and was ever an opponent of those false philosophies of France, Germany and Great Britain, and more sparcely of our own Country, which seek to undermine the Christian religion ; that religion which gives to life its greatest consolations, and enables man to triumph over the fears of death ; that religion whose immortal faith, alone, gives adequate meaning to the Universe.

ON THE ALLEGED PARALLELISM OF COAL BEDS.

By Jno. J. Stevenson.

(*Read before the American Philosophical Society, Dec.* 18, 1874.)

That coal seams are approximately parallel, is a common belief among persons residing in the coal fields of our country. The more observing of our coal operatives, however, long ago discovered that the assertion of parallelism is a fallacy, and that the interval between any two given beds of coal is liable to vary many feet in thickness within comparatively short distances. So general is this variation that it amounts to a positive law. Until this was accepted as a fact, to the utter exclusion of any notion of parallelism, the coals of southwestern Pennsylvania remained a worse than Chinese puzzle to Geologists, and